

Claims

1 -3. (Canceled)

4. (Currently Amended) The method of claim 436 wherein said biological sample is isolated from an organism selected from the group consisting of mouse and human.

5. (Currently Amended) The method of claim 436 wherein said biological sample is isolated from the group consisting of brain and blood.

6. (Currently Amended) The method of claim 436 wherein said biological sample is isolated from a cell culture.

7. (Currently Amended) The method of claim 436 wherein said Dab1 phosphorylation occurs *in vivo*.

8. (Currently Amended) The method of claim 436 which comprises immunoprecipitating said Dab1 from said biological sample prior to said determining step using an antibody that binds to Dab1 phosphorylated and unphosphorylated on said serine.

9. (Canceled)

10. (Currently Amended) The method of claim 436 wherein Dab1 phosphorylation is determined using an antibody that binds to Dab1 only when it is phosphorylated on said serine.

11. (Currently Amended) The method of claim 10 wherein said antibody is raised against the polypeptide fragment ~~TPAPRQSS(PO₄)PSKSSA~~ (SEQ ID NO:3 which contains a phosphate group on the 8th amino acid).

12. (Canceled)

13. (Original) The method of claim 10 wherein said antibody is polyclonal.

14. (Original) The method of claim 10 wherein said antibody is monoclonal.

15. (Original) The method of claim 10 wherein Dab1 phosphorylation is determined by using techniques consisting of radioimmunoassay, ELISA, "sandwich" immunoassays, immunoradiometric assays, gel diffusion precipitation reactions, immunodiffusion assays, *in situ* immunoassays, western blots, precipitation reactions, agglutination assays, complement

fixation assays, immunofluorescence assays, protein A assays, immunoelectrophoresis assays, mass spectrometry and antibody array.

16-35. (Canceled)

36. (Previously Presented) A method for detecting cyclin dependent kinase 5 (Cdk5) serine kinase activity in a biological sample, which method comprises determining whether the carboxy terminal domain of Disabled 1 protein (Dab1) in said sample is phosphorylated on a serine within a candidate sequence, wherein phosphorylation of Dab1 on said serine indicates the presence of active Cdk5 in said sample.

37. (Currently Amended) The method of claim 36 wherein said serine is selected from the group consisting of a serine corresponding to position 3 of ~~QSSPSK~~ (SEQ ID NO:1), such position being determined by alignment of Dab1 with SEQ ID NO:1 and a serine at position 21 of ~~SSASHVSDPTADDIFEEGFESPSK~~ (SEQ ID NO:2), such position being determined by alignment of Dab1 with SEQ ID NO:2.

38. (Currently Amended) A method for detecting cyclin dependent kinase 5 (Cdk5) serine kinase activity in a biological sample, which method comprises immunoprecipitation of Dab1 from said biological sample; contacting the immunoprecipitated Dab1 with a phosphoantibody generated using SEQ ID NO:3 ~~having a phosphorylated serine at position 8 of SEQ ID NO:3~~ as an antigen; detecting binding of the phosphoantibody to a serine within a candidate sequence in the carboxy terminal domain of said Dab1, wherein binding of the phosphoantibody to said serine of said Dab1 in such biological sample indicates the presence of Cdk5 serine kinase activity in said sample.

39 – 40. (Canceled)